

SBA FAST PROGRAM

BEST PRACTICES GUIDE



U.S. Small Business
Administration

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SECTION 1

INTRODUCTION AND RELEVANT FINDINGS

Overview of the Best Practices Guide

The Federal and State Technology (FAST) Partnership Program (FAST program) is a competitive grant program managed by the U.S. Small Business Administration (SBA) that is designed to strengthen the technological competitiveness of small businesses seeking funding from the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

The FAST program provides funding to organizations for executing state and regional programs that increase the number of SBIR/STTR proposals (through outreach and financial support); increase the number of SBIR/STTR awards (through technical assistance and mentoring); and better prepare SBIR/STTR awardees for commercialization success (through technical assistance and mentoring).

In 2018, SBA initiated a study of the FAST program. The study included interviews with current FAST grantees, other SBIR support organizations, small businesses served by FAST grantees, and federal SBIR/STTR Program Managers. This guide is a product of the study. It summarizes feedback gathered from the interviews and synthesizes best practices identified in the interviews as well as in narrative reports submitted by FAST grantees.ⁱ

This guide is structured in two sections. Section 1 provides an overview of the organizations interviewed and the findings that underpin the best practices. Section 2 presents best practices and associated examples in four key areas:

- Increase the number of first-time and underserved applicants.
- Meet first-time client needs.
- Facilitate more competitive proposals.
- Improve SBIR/STTR client outcomes.

The main audiences for this guide include current and prospective FAST grantees, and organizations that provide similar services. This guide is not meant to be prescriptive but is meant to provide inspiration and useful guidance for conducting your work.

Summary of Organizations Interviewed

This guide is informed by interviews with 47 stakeholders, as summarized below:ⁱⁱ

- **18 FAST or other SBIR support organizations**, including:
 - 10 FAST grantees who received a FAST award in FY 2018
 - 8 other SBIR support organizationsⁱⁱⁱ who did not receive a FAST award in FY 2018 (though many received FAST awards in previous years and intend to re-apply next year)
- **23 small businesses who received assistance from FAST grantees** (referred to as “clients” or “small businesses”), including:
 - 9 who submitted successful SBIR/STTR applications in the last 1-2 years
 - 7 who submitted unsuccessful SBIR/STTR applications in the last 1-2 years
 - 7 who have not submitted an SBIR/STTR application in the last 1-2 years but were eligible to apply
- **6 SBIR/STTR Program Managers** (referred to as “PMs”) at federal agencies

Appendix A provides information about the FAST and other SBIR support organizations interviewed. **Appendix B** summarizes the most common services offered by FAST and other SBIR support organizations, and the services most frequently requested by SBIR/STTR applicants and awardees. This guide also draws on narrative reports from 10 FAST grantees and publicly available information on FAST grantee websites.

Summary of FAST Applications/Awards and Client Base

Applying for FAST—Most of the FAST and other SBIR support organizations interviewed have applied for FAST funding multiple times, including in 2018. They use sources of funding other than FAST; about half of the respondents apply regularly to

FAST Awards Received

- *Number of FAST awards received to date* ranges from 0 to 8. Most grantees interviewed are recurrent FAST grantees.
- *Year of first FAST award* ranges from 2001 to 2018 but falls within the last decade for most FAST and other SBIR support organizations.
- *Year of most recent award for other SBIR support organizations* (not current grantees) who previously received a FAST award ranges from 2001 to 2016.

other federal, state, or private grant programs (for example, economic development grants from federal/state programs and charitable foundations). Most of the FAST grantees interviewed originally heard about the FAST program through their job or network, such as prior employment with state agencies or prior relationships with economic development organizations.

Clients Served—The majority of FAST and other SBIR support organizations interviewed provide a wide range of services and do not focus on a specific SBIR/STTR agency. Most focus their outreach on prospective first-time applicants and do not have a specific program for Phase 2. In addition, most serve a variety of small businesses and do not use a screening process to identify SBIR/STTR candidates.



Client Base

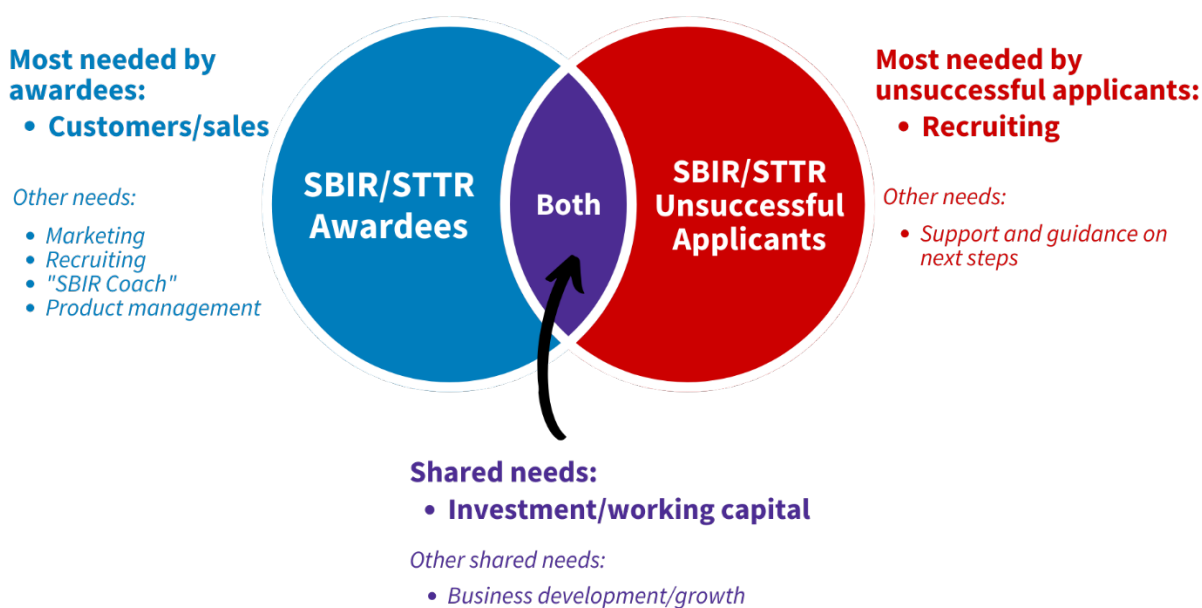
- On average, the organizations interviewed serve 268 clients per year. Excluding one outlier (which had 1,500 clients), organizations serve an average of 198 clients per year.
- On average, the organizations interviewed provide one-on-one assistance to 27 SBIR/STTR applicants and 6 SBIR/STTR awardees each year.

Client Feedback

Overview of Clients Interviewed—The average business age of clients interviewed is five years. Many small businesses work with medical or environmental-related products. The majority are first-time clients of a FAST organization and found the organization through their peer network, an accelerator program, or word of mouth. Just over half of the applicants interviewed won their most recent SBIR/STTR application; of the successful applicants, most are first-time SBIR/STTR awardees.

Greatest Needs—As shown below, among SBIR/STTR awardees, the most frequently mentioned needs are investment/working capital and customers/sales. Other needs mentioned include product management, business development/growth, marketing, recruiting, and an “SBIR Coach.” Among unsuccessful SBIR/STTR applicants, the most frequently mentioned needs are investment/working capital and recruiting. Other

needs mentioned include business development/growth support and guidance on next steps, including guidance to resubmit their SBIR/STTR proposal.



Feedback on FAST Services—Clients identified proposal review, mentorship, and workshops as the most valuable assistance they received when developing their application. All but one SBIR/STTR awardee reported commercialization progress, identifying training, networking, and funding as the most valuable services for growth.

Gaps in FAST Services—As shown in the table below, clients interviewed identified various gaps and suggestions on how to improve the services provided by FAST grantees to their clients.

Gaps in services identified by clients	Suggestions offered by clients to address gaps in services
Introductions to investors	Set up meetings with investors.
Clear communication about the full range of services the FAST organization offers	Communicate from the perspective of the client – show how SBIR/STTR fits into the client's goals and plans.
Development of a marketing plan and next steps	Provide guidance on developing a marketing plan, focusing on strategy (i.e., how to approach target markets and identify growth opportunities).
Assistance with proposal writing	Host workshops and trainings on proposal writing, especially for non-academic clients.
Assistance with team building	Help identify and fill gaps in roles/skills (for example, Principal Investigators, or PIs).

Feedback on the SBIR/STTR Process—Almost all unsuccessful applicants and non-applicants interviewed said that they would apply for SBIR/STTR funding in the future. While SBIR/STTR award funding is strictly for R&D efforts, respondents identified several other needs that are not covered by SBIR/STTR funding, including product development, customer discovery, and hiring experts, which are crucial steps to executing on their commercialization plans and growth strategies.

- Some respondents mentioned that the process of working with a FAST organization to prepare their SBIR/STTR application has helped them identify and fill gaps (for example, team building).
- Other respondents stated that an SBIR/STTR award would enable them to confirm their research concept and gain the credibility needed to capitalize on new business opportunities. For example, collecting data on technology is useful for securing investors.
- Some federal Program Managers also noted that once a company wins an SBIR/STTR Phase 1 award, they have access to the agency's commercialization assistance program (when available), which can both help companies win a Phase 2 award and help set them on a path toward commercialization success.

Before re-applying for SBIR/STTR funding, however, clients would like to see an increase in the SBIR/STTR award amount,^{iv} a simplified/shortened application process, greater flexibility in how awarded funds can be used, and opportunities for one-on-one interactions with the agency (for example, a help desk for filling out and discussing the application or interviews with the agency's SBIR/STTR program).

SECTION 2

BEST PRACTICES PLAYBOOK

The outline below provides an overview of the best practices for FAST organizations.



PLAY 1—Increase the Number of First-Time and Underserved Clients

- Conduct strategic, proactive outreach to prospective clients.
- Coordinate with partners to enhance the local/regional entrepreneurial innovation ecosystem.
- Communicate the full range of benefits that the SBIR/STTR program can provide and the full scope of services the FAST organization can provide to small businesses.



PLAY 2—Meet First-Time Client Needs

- Provide a comprehensive, yet digestible overview of the SBIR/STTR process for prospective first-time applicants.
- Help clients determine if SBIR/STTR is a good fit for them and understand what the application process entails.
- Use external tools and resources to complement services provided in-house.
- Provide one-on-one assistance to promising candidates for SBIR/STTR.



PLAY 3—Facilitate More Competitive Proposals

- Be selective up front in identifying good candidates for SBIR/STTR.
- Plan for commercialization from the start.
- Build a quality team and promote networking opportunities with successful SBIR/STTR applicants.



PLAY 4—Improve SBIR/STTR Client Outcomes

- Provide holistic support and set the company up for success from Phase 1 through Phase 3 and beyond.
- Provide access to investors.
- Provide personalized and customized assistance and follow up with clients.

Guideposts to the Best Practices

While many of the best practices in this guide are broadly applicable, some are especially relevant for certain types of groups, including rural areas, underserved states, women-owned and minority-owned businesses, and Small Business Development Centers (SBDCs). In Section 2, we highlight best practices that pertain especially to:

- Best practices for FAST organizations serving rural communities, designated (R)
- Best practices for FAST organizations serving underserved states,^v designated (U)

Underserved states are the bottom 1/3 of all states by number of SBIR Phase I awards won by applicants from the state.

- Best practices for FAST organizations serving minority/women applicants, designated (M/W)
- Best practices for FAST organizations that are SBDCs, designated (SBDC)



PLAY 1—Increase the Number of First-Time and Underserved Clients

Common Ground

Why is increasing SBIR/STTR participation from underserved communities important?

- As established in the Small Business Act,^{vi} FAST awards build the SBIR/STTR ecosystem through outreach, increasing the pipeline of possible applicants, particularly women, disadvantaged individuals, and small businesses in rural states. Engaging entrepreneurs from underserved communities is important to promote equity and economic development.
- Among the FAST and other SBIR support organizations interviewed, 48% of their clients come from underserved populations, on average. Most organizations observed that rural areas and underserved communities are less aware of SBIR/STTR programs, while metropolitan areas with a major university are more aware.
- FAST organizations and their clients operate within an entrepreneurial ecosystem. A thriving entrepreneurial innovation ecosystem is one in which universities, business development service providers, companies, and other ecosystem actors coordinate and leverage each other's strengths to provide opportunities for all types of businesses. FAST organizations and federal Program Managers emphasized strengthening the ecosystem where it is currently less developed, including rural states and underserved communities.

Feedback from FAST grantees:

“We go to SBIR candidates rather than waiting for people interested in SBIR to come to us.”

“We partner with organizations already working with underserved communities.”

Feedback from SBIR/STTR Program Managers:

“States that receive FAST awards have an exponentially higher opportunity for success.”

“FAST funding is needed for states underrepresented in the SBIR/STTR program, and in the remaining states, FAST funding would allow greater focus on underrepresented communities.”

“Meet the folks where they are. Provide examples of success they [applicants] can relate to.”



PLAY 1—Increase the Number of First-Time and Underserved Clients

What outreach approaches do FAST grantees and similar organizations use to reach underserved populations?

Grantees use a variety of methods to encourage participation from first-time/underserved clients:

- **Partner with other organizations that have ties to underserved groups.** For example, one grantee worked with the Hispanic Chamber of Commerce to create connections with potential mentors and investors and leveraged those networks to help small businesses. Others created partnerships with women's business centers and presented at their events.
- **Hold events tailored to small businesses.** Several grantees held workshops focusing on small business issues that affect underserved populations, such as proposal writing, proper accounting, and industry mentor connections. While these challenges affect all businesses, they can disproportionately affect underserved businesses without a support network.
- **Offer financial assistance** reserved for women and minority small businesses to participate in programs.
- **Recruit at conferences** geared toward underserved small businesses.
- **Host award ceremonies** highlighting women and minority entrepreneurs, increasing their visibility.
- **Work with minority-serving institutions (MSIs) with an R&D component**, which allows grantees to reach minority entrepreneurs with research and technology that may be suitable for SBIR/STTR.
- **Focus on rural outreach strategies** including holding SBIR/STTR workshops in rural areas, circulating business tips in rural publications, hosting Rural Community Innovator Roundtables, and holding workshops for starting and running online businesses.

Examples of Outreach Approaches

- Statewide SBIR/STTR events to raise awareness of the SBIR/STTR program across the state and provide opportunities to meet one-on-one with SBIR/STTR Program Managers. These events also bring together organizations that comprise the entrepreneurial innovation ecosystem, informing them about the SBIR/STTR programs and how they can assist small businesses.
- University student-led business competitions to identify ideas/teams with potential for SBIR/STTR funding.
- Tools to increase client referrals from partner organizations (for example, one FAST grantee uses a SBIR Candidate Assessment Tool to help partner organizations determine if SBIR funding is appropriate for their clients).



PLAY 1—Increase the Number of First-Time and Underserved Clients

Best Practices

Conduct strategic, proactive outreach to prospective first-time and underserved clients.

- ✓ Leverage the SBDC-University connection to build the pipeline of early career scientists who can apply for SBIR/STTR funding. (**SBDC**)
- ✓ Train women and minority business centers to identify potential SBIR/STTR candidates from underserved populations and partner with them for marketing events/trainings. Provide successful role models who started as first-time/underserved applicants. (**M/W**)
- ✓ Provide financial assistance to make services accessible to women- and minority-owned small businesses with financial challenges. (**M/W**)
- ✓ Conduct outreach workshops across the state. Negotiate partnerships/sponsorships to support and market statewide SBIR/STTR events.
- ✓ Engage rural communities through targeted outreach events and online courses and materials that do not require travel. (**R**)
- ✓ Use social media to increase awareness of the FAST organization and its services. Conduct targeted marketing for different audiences that addresses language and cultural differences.

Coordinate with partners to enhance the local/regional entrepreneurial innovation ecosystem.

- ✓ Coordinate programs with organizations that focus on serving underserved populations. (**R**) (**U**) (**M/W**)
- ✓ Showcase successful companies that start-ups can relate to. One FAST grantee wrote blog posts with case examples about participants, which made the program more tangible for other small businesses and led to a steadier stream of inquiries and applications. (**U**) (**M/W**)
- ✓ Build networks with SBIR/STTR service providers to reach more potential clients and provide more technical assistance to clients. (**U**)
- ✓ Coordinate with university technology transfer agents and business incubators to identify and support potential SBIR/STTR clients. (**SBDC**)

Communicate the full range of benefits that the SBIR/STTR program can provide and the full scope of services the FAST organization can provide to small businesses.

- ✓ Provide a comprehensive overview of the SBIR/STTR program and the financial assistance available from FAST organizations.
- ✓ Educate small businesses on the range of agencies/programs that provide SBIR/STTR funding, including smaller/overlooked agencies.
- ✓ Provide an overview of the services offered by the FAST organization. Discuss FAST capabilities and services through in-person meetings and describe how SBIR/STTR fits into the client's plans.
- ✓ Participate in events or webinars with SBIR/STTR federal agencies to learn about relevant opportunities for potential applicants.



PLAY 1—Increase the Number of First-Time and Underserved Clients

Examples: Implementing Best Practices

Illinois Women's Business Development Center (WBDC)

Illinois's Women's Business Development Center (WBDC) launched *InventIllinois* with the regional nonprofit Invent2026. Invent2026 provides technological and commercialization expertise; WBDC leverages its relationships with diversity partners across the state, including Black Tech Mecca and Bunker Labs (an incubator for veteran-owned businesses), to increase participation from underserved groups.^{vii}

Minnesota High Tech Association (MHTA)

The Minnesota High Tech Association (MHTA) regularly hosts events and programs geared toward women in technology and entrepreneurship, such as Women Leading in Technology.^{viii} These events help women share their stories and best practices in the technology field. MHTA also developed an outreach strategy for rural communities with their Minnesota Innovation and Commercialization Consortium (MICC), which assists rural-based firms in applying for SBIR/STTR investments through local, state, and national research partnerships.^{ix}

Iowa Innovation Corporation (IICorp)

The Iowa Innovation Corporation (IICorp) recognizes women in business, government, or academia who are leaders in science, technology, engineering, and mathematics (STEM) with the annual Women of Innovation Awards. Students at the secondary and collegiate levels are eligible for a \$2,500 scholarship in two award categories.



PLAY 2— Meet First-Time Client Needs

Common Ground

What are the barriers to first-time applicants?

Consider these reasons given by clients who did NOT apply for SBIR/STTR funding:

- Burdensome application process and low winning odds
- Lack of proposal writing assistance
- Uncertainty around which agency/program would be interested in their technology and agency selection process
- Gaps in their team (for example, not having a PI)

Feedback from Federal SBIR/STTR Program Managers:

“The biggest gap is finding centralized information for all of these services. There is an opportunity to bridge the gap between hand-offs.”

While these barriers can affect all businesses, they can disproportionately affect first-time applicants who lack familiarity with the SBIR/STTR program and have limited resources to apply.

The feedback from small business clients was generally confirmed by the SBIR support organizations and federal Program Managers interviewed. The table below summarizes feedback from each group.

	What do FAST and other SBIR support organizations report as the most-needed assistance for first-time applicants?	On what topics do clients seek help?	What do clients report as barriers to first-time applicants?	What do federal Program Managers report as the most-needed assistance for first-time applicants?
Access to funding	✓			
Team development	✓		✓	
Clear understanding of SBIR/STTR program and application requirements	✓	✓	✓	✓
Solicitation matching	✓			
Proposal development assistance	✓	✓	✓	✓
Business advice		✓		✓



PLAY 2— Meet First-Time Client Needs

Best Practices

Provide a comprehensive, yet digestible overview of the SBIR/STTR process for prospective first-time applicants.

- ✓ Provide a full understanding of the SBIR/STTR process (all three phases) and what the SBIR/STTR program as a whole can do for small businesses. (U)
- ✓ Make content user-friendly and digestible for audiences with limited time and little familiarity with the SBIR/STTR program. (R) (U) (M/W)
- ✓ Consider the SBIR.gov training modules and concise reference guides to complement the information available on agencies' websites.

Help clients determine if SBIR/STTR is a good fit for them and understand what the application process entails.

If Yes, provide information about the SBIR/STTR process from the perspective of a small business who has a good idea and needs funding, but is not familiar with the SBIR/STTR program and is unsure how their idea fits in to the SBIR/STTR landscape.

- ✓ Clarify each agency's specific requirements and objectives, SBIR/STTR funding criteria, and how each agency's SBIR/STTR program differs.
- ✓ Provide logistical information about the application process and how to develop a strong application (these are barriers to entry). (U)
- ✓ Invite Program Managers to present at workshops and webinars to help small businesses identify potential agencies/solicitation topics. (U)
- ✓ Provide proposal writing assistance and/or microgrant/Phase 0 funding.

If No, ask "What is a better step for them?" and "Who should they talk to next?" Clients reported receiving valuable non-SBIR/STTR services from FAST grantees, including valuable connections to investors, teaming partners, and other companies.

Use external tools and resources to complement services provided in-house.

- ✓ Refer small businesses to online guides/video tutorials about the SBIR/STTR program and agencies' application processes on SBIR.gov.
- ✓ Develop topic-specific training webinars and post them online. Consider developing different modules about specific agencies and steps in the application process.
- ✓ Provide complementary services and referrals to university programs, SBDCs, PTACs, and other external service providers. (SBDC)

Provide one-on-one assistance to promising candidates for SBIR/STTR.

- ✓ One-on-one consulting requires significant time but can be very effective. Assistance includes direct mentoring and business assistance, as well as referrals to external resources and partners.
- ✓ This also appears to improve client outcomes under SBIR/STTR.



PLAY 2— Meet First-Time Client Needs

Examples of Best Practices

“Getting Started” Guide

One FAST grantee developed a “getting started” guide that divides agencies’ SBIR manuals into smaller parts and presents key facts for each agency. The grantee has found this to be more digestible to small business clients than providing the full agency manuals.

Leveraging Online Tools and Resources

One FAST grantee who fields numerous inquiries about the SBIR/STTR program refers clients to online resources including SBIR.gov and agency websites. The online resources answer the basic questions about the SBIR/STTR program and help prospective first-time applicants decide if they want to pursue SBIR/STTR further. This allows the grantee to spend more time working with clients who are strong SBIR/STTR candidates, while meeting the needs of curious/undecided first-time clients.

Feedback from FAST grantees:

“We tell companies to expect to write 3–4 proposals before they get funding. We recognize that success is a combination of quality and quantity.”

Feedback from clients:

“FAST helps applicants [by providing] a simplified version of a complex platform.”

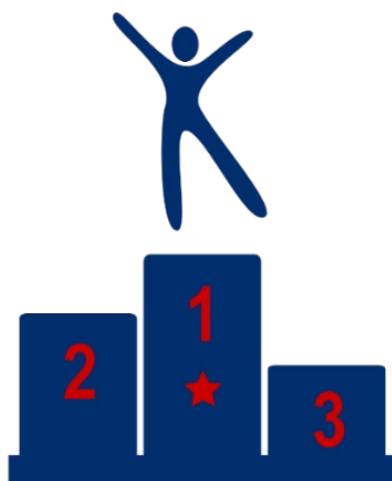
“We were aware of the existence of the SBIR program, but we didn’t know how to go about submitting an application [before working with our FAST organization].”



PLAY 3—Facilitate More Competitive Proposals

Characteristics of Successful Applicants

The SBIR/STTR solicitation process is highly selective and complex; the most promising candidates need more than a good idea to be selected and succeed. SBIR/STTR Program Managers report that successful applicants for Phase 1 and Phase 2 tend to have similar characteristics, including a clear customer target market, clear problem identification, a well thought-out business strategy, and a commercialization plan. Phase 2 applicants need to have shown potential in Phase 1, and their commercialization plan is especially important.



Feedback from SBIR/STTR Program Managers:

“The best proposals are the ones that show technical merit but also clearly identify the market they are pursuing.”

“They [applicants] need to know the long-term game.”

Feedback from a client:

“The most valuable service to application development was “writing a commercially viable proposal — identifying the need and the size of the need, and not just focusing on the technical side.”

Feedback from FAST grantees:

“Work with companies that want to win many awards, not just one award.”



PLAY 3—Facilitate More Competitive Proposals

Best Practices

Be selective up front in identifying good candidates for SBIR/STTR.

- ✓ Ensure clients understand that SBIR/STTR provides research funding, not general funding to run a business.
- ✓ Use a screening process and train staff to identify promising candidates for SBIR/STTR, based on several dimensions of success (such as a strong team and innovative/promising technology).
- ✓ Set expectations with clients: hours required to apply, how many times they are likely to apply before winning, patience to wait for the “right” topic to respond to.
- ✓ Focus SBIR/STTR assistance on clients who want to take their technology from Phase I to Phase III.

FAST grantees may have to screen many clients to find a good fit for SBIR/STTR.

Plan for commercialization from the start.

- ✓ Help clients conduct basic market research to develop an understanding of their target market and their market entry and growth plan.
- ✓ Focus on both technical and non-technical success factors, including customer discovery/acquisition, market and funding strategy, and team development. Technical and non-technical factors are equally important.
- ✓ Help clients plan for commercialization with tools such as Business Model Canvas and programs such as the National Science Foundation I-Corps program. Start-ups that have graduated from I-Corps are competitive for SBIR/STTR due to the “training, common language, and focus on the technology value proposition.”^x

Build a quality team and promote networking opportunities with successful SBIR/STTR applicants.

- ✓ Help start-ups identify what team members are needed (including an experienced PI) and options for filling these gaps.
- ✓ Combine training events with networking opportunities.
- ✓ Network with university researchers who can serve as subject matter experts. Leverage university connections and advisory boards. (SBDC)
- ✓ Pair less-experienced entrepreneurs with successful companies like them who can serve as mentors. (U)



PLAY 3—Facilitate More Competitive Proposals

Examples of Best Practices

Self-Assessment Framework for Determining “Fit” for SBIR/STTR

The Minnesota High Tech Association (MHTA) gives small businesses that inquire about SBIR/STTR a five-question self-assessment to help determine their fit for the program. The self-assessment tool (which is available at <https://mhta.org/mnsbir/assistance/>) addresses five areas that are critical for success with SBIR/STTR: technology innovation, technical objectives and challenges, market opportunity, company and team, and scientific or technical publications/articles.

The Four Ts

One FAST grantee emphasizes four success factors for its small business clients, which it calls The Four Ts:

1. **T**rust (invest wisely)
2. **T**echnology (innovation)
3. **T**eam (collective with the right qualifications)
4. **T**ransition (story that demonstrates the company will be successful)

SBIR Advance Program

A client of a FAST grantee reported that the SBIR Advance Program—an intensive commercialization program offered by the FAST organization—was valuable for developing a robust commercialization plan for SBIR Phase 2, validating the business, and attracting investors.

Feedback from clients:

“The SBIR Advance Program enabled us to make a more robust pitch to investors and provides validation to the business.”

“I cannot recommend the SBIR Advance Program highly enough. It's a lifesaver.”

“It allowed us to flesh out our commercialization plan to identify our beachhead market and execute on it.”



PLAY 4—Improve SBIR/STTR Client Outcomes

Findings

How does FAST contribute to SBIR/STTR applicants' success?

FAST organizations measure their success largely by their clients' outcomes, which included the following:

- **Following Phase 1**, half of the FAST grantees interviewed reported that their clients received Phase 2 funding, developed a prototype, integrated the SBIR/STTR award into the company's long-term plan, or raised additional funding/investment. Half of the other SBIR support organizations reported that their clients raised additional funding.
- **Following Phase 2**, several FAST organizations reported that their clients obtained additional funding and/or won federal contracts.

Almost all SBIR/STTR awardees received continuous support from their FAST organization throughout the application process and subsequent award(s). Clients identified training, networking, and funding as the most valuable services for growth.

All but one SBIR/STTR awardee reported commercialization progress.

Feedback from clients:

"Proposal writing, tailoring to the specific agency, was huge. The best help from the organization was how decisions are made [by the agency]."

Feedback from FAST grantees:

"Our goal is not SBIR awards, it is successful companies, it is commercialization."

What are the main challenges for SBIR/STTR awardees according to SBIR/STTR Program Managers?

 Phase 1: Discovery	<ul style="list-style-type: none"> • Commercialization assistance; expanding the company's target market • Creating a commercialization plan that demonstrates the company's understanding of the market and ability to successfully enter the market with a clear growth strategy
 Phase 2: Development	<ul style="list-style-type: none"> • Establishing strategic partnerships with venture capital (VC) firms, angel investors, larger companies (including prime contractors), and others • Scaling up a business to mass production (manufacturing capabilities, cost containment)
 Phase 3: Commercialization	<ul style="list-style-type: none"> • Pitching to VCs • Advancing technology development



PLAY 4—Improve SBIR/STTR Client Outcomes

Best Practices

Provide holistic support and set the company up for success from Phase 1 through Phase 3 and beyond.

- ✓ Help small businesses see the big picture and how SBIR/STTR fits into their business model. Outline a “roadmap” for their next steps.
- ✓ Sequence the FAST organization’s programming in a logical way to ensure enough time for small businesses to work effectively with the FAST organization before the next application deadline. Consider focusing on particular agencies, then structuring around those deadlines.
- ✓ Engage clients as early as possible. Break down the application process into milestones with clearly defined tasks and due dates.
- ✓ Connect clients with the people they need to be successful. For example, one FAST grantee introduced a client to a software developer who has been key in helping them turn a concept into a product.
- ✓ Look into Cooperative Research and Development Agreements (CRADAs or CRDAs) and partnerships with academics to advance the company’s technology. Consider resources provided by the Federal Lab Consortium.^{xi} (SBDC)

Provide access to investors.

- ✓ Establish partnerships with venture capital (VC) firms, angel investors, and larger companies (including prime contractors)—provide introductions and set up meetings with investors.
- ✓ Look for financing opportunities and help companies pitch to VCs. Several clients requested assistance identifying and setting up meetings with investors.

Provide personalized and customized assistance and follow up with clients.

- ✓ Provide one-on-one counseling on key topics such as proposal review.
- ✓ Make workshops interactive and informational. Consider “speed networking” and various games to break the ice and encourage attendees to meet new people.
- ✓ Develop relationships with clients and keep in touch: help clients take their next steps to success and invite them back as motivational speakers, trainers, or mentors.
- ✓ Track outcomes for current or previous clients, even if the outcomes are downstream from receiving services from the FAST organization.



PLAY 4—Improve SBIR/STTR Client Outcomes

Examples of Best Practices

Maryland Technology Development Corporation (TEDCO)

The Maryland Technology Development Corporation's (TEDCO) primary metric of success (for programs including SBIR/STTR support activities) is funding raised since project completion.^{xii} TEDCO also measures success based on number of people served, programs administered, jobs created, and impact on the economy.^{xiii}

Maine Technology Institute (MTI)

The Maine Technology Institute (MTI) uses Venture Investment Readiness & Awareness Levels (VIRAL), a tool created by Village Capital, to understand the maturity of a specific product or small business and measure the progress of its clients over time. The tool considers factors such as sustainability of the company, progress since inception, team development, customer discovery, market feedback, and sustainability/exit strategy.^{xiv}

Appendix A: Overview of FAST and Other SBIR Support Organizations

Summary of FAST Grantees Interviewed

Organization ID ¹	Organization Name	Previous FAST Grantee?	Date Established	In an Underserved State? ²	SBDC?	Part of a University System?	Nonprofit?	State Economic Development Organization?
FG-01	Tom Love Innovation Hub	Yes	2017	Yes	No	Yes	No	No
FG-02	Center for Technology Commercialization (CTC)	Yes	2005	No	No	Yes	No	No
FG-03	VertueLab	Yes	2007	No	No	No	Yes	No
FG-04	Delaware SBDC	Yes	1984	No	Yes	Yes	No	No
FG-05	Louisiana Technology Transfer Office	Yes	2005	Yes	No	Yes	No	No
FG-06	Tennessee Department of Economic and Community Development	Yes	1972	No	No	No	No	Yes
FG-07	First Flight Venture Center (FFVC)	Yes	1994	No	No	No	Yes	No
FG-08	Minnesota High Tech Association (MHTA)	Yes	1984	No	No	Yes	Yes	No
FG-09	Nebraska Business Development Center (NBDC)	Yes	1977	Yes	Yes	Yes	No	No
FG-10	Arrowhead Center – New Mexico State University	Yes	2004	No	No	Yes	Yes	No

Notes: (1) A unique identification number was assigned to each organization by the study team. (2) According to the SBA, underserved states refer to the states that win fewer SBIR/STTR awards. This is reflected in the match requirement, which is categorized for each state and can be found in the annual Funding Opportunity Announcement (FOA). The 1/3 of states that are required to commit to the lowest match rate of \$0.50 for each \$1 of federal funds are considered underserved. The classification in this guide is based on the 2018 FOA since that was the year when the interviews for this study were conducted.

Summary of Other SBIR Support Organizations Interviewed

Organization ID ¹	Organization Name	Previous FAST Grantee?	Date Established	In an Underserved State? ²	SBDC?	Part of a University System?	Nonprofit?	State Economic Development Organization?
FA-01	University of Arizona Center for Innovation	No	2003	No	No	Yes	No	No
FA-02	Massachusetts SBDC	Yes	1980	No	Yes	Yes	No	No
FA-03	University of Southern Mississippi Business & Innovation Assistance Center (USM/BIAC); and Innovate Mississippi	Yes	2009	Yes	No	Yes	Yes	No
FA-04	USTAR SBIR Center	Yes	2006	No	No	Yes	No	No
FA-05	Washington Procurement Technical Assistance Center at the Thurston Economic Development Council	No	1970s/80s	No	No	No	Yes	No
FA-06	Puerto Rico Trade and Export Company	Yes	2003	Yes	No	No	No	Yes
FA-07	Center for Innovative Technology (CIT)	Yes	1985	No	No	No	Yes	No
FA-08	Maine Technology Institute, SBIR/STTR Technical Assistance Program (TAP)	Yes	1999	Yes	No	Yes	Yes	No

Notes: (1) A unique identification number was assigned to each organization by the study team. (2) According to the SBA, underserved states refer to the states that win fewer SBIR/STTR awards. This is reflected in the match requirement, which is categorized for each state and can be found in the annual Funding Opportunity Announcement (FOA). The 1/3 of states that are required to commit to the lowest match rate of \$0.50 for each \$1 of federal funds are considered underserved. The classification in this guide is based on the 2018 FOA since that was the year when the interviews for this study were conducted.

Appendix B: Summary of Services

The following tables summarize the most common services offered by FAST and other SBIR support organizations and the services most frequently requested by SBIR/STTR applicants and awardees.

Assistance Provided To	Type of Assistance Provided
Applicants	Application preparation
	Training on application process and solicitations <ul style="list-style-type: none"> • Regular group training sessions and webinars • Training on the application process • Training on SBIR/STTR solicitations • Solicitation matching
	Phase 0 awards
	Phase 1 awards
Applicants/Awardees	One-on-one counseling/mentoring
	Proposal writing assistance/review
	Networking – outreach and workshops
	Financial / budget assistance
	Business assistance <ul style="list-style-type: none"> • Market research • Funding strategy • Team development • Referrals to external service providers
	Technical assistance <ul style="list-style-type: none"> • Technology validation • Prototype development
Awardees	Strategy <ul style="list-style-type: none"> • Federal contracting • Business plan • Commercialization plan • Advanced training on Phase 2 and Phase 3 planning • Customer engagement • Partner engagement

FAST organizations provide a range of services to awardees that emphasize commercialization/business plan and strategy. For the majority of both SBIR/STTR applicants and awardees, support from FAST organizations is not provided for a defined length of time.

Assistance Requested by	Type of Assistance Requested
Applicants	Application assistance <ul style="list-style-type: none"> • Microgrant for application assistance • Training on application process • Understanding solicitation; solicitation matching Business assistance: referrals to external service providers
Applicants/Awardees	One-on-one counseling/mentoring Proposal writing assistance/review Financial / budget assistance <ul style="list-style-type: none"> • Identifying available funding • Accounting/budgeting • Cost accounting standards/FAR compliance Business assistance <ul style="list-style-type: none"> • Market research • Accelerator program • Commercialization assistance • Building networks/teams
Awardees	Strategy <ul style="list-style-type: none"> • Marketing / customer discovery • Funding strategy • Training on Phase 2 and Phase 3 planning

Glossary^{xv}

applicant—An eligible organization that applies for FAST funding under the Notice of Funding Opportunity.

award—Financial assistance that provides supporting or stimulation to accomplish a public purpose. Awards include grants and other agreements in the form of money or property in lieu of money, by the federal government to an eligible recipient.

client—Someone who attends outreach events/meetings, trainings/workshops, or has received other types of assistance from a FAST organization (for example, proposal writing assistance). There is no minimum number of hours of interaction required nor does the interaction have to be one-on-one or in-person.

counseling—Services provided one-on-one to an individual and/or business that are delivered in person (face-to-face), on the telephone, or electronically and which: a) are substantive in nature and concern the formation, management, financing, and/or operation of a small business enterprise; AND b) are specific to the needs of the business or individual; AND c) require a signed SBA Form 641 or equivalent form that supports SBA's management information database.

Federal and State Technology Partnership Program (FAST)—The FAST program, administered by the SBA's Office of Innovation & Technology, provides one-year funding to organizations to execute state/regional programs that increase the number of SBIR/STTR proposals leading to an increase in the number of SBIR/STTR awards. FAST is designed to strengthen the technological competitiveness of small businesses across the country and stimulate economic development with outreach, training, mentoring, financial support, and business/technical assistance to R&D focused small businesses, with a particular emphasis on fostering participation from women-owned, rural-based, and socially/economically disadvantaged firms to help them compete in the SBIR and STTR Programs. The program was established by the Consolidated Appropriations Act of 2001, codified at 15 U.S.C 657d(c); it expired on September 30, 2005 and was reestablished under the Consolidated Appropriations Act of 2010.

FAST grantee—Recipient of a FAST grant; includes state and local economic development entities, Small Business Technology Development Centers, Women's Business Centers, incubators, accelerators, colleges, and universities that provide support to small businesses developing and commercializing high risk technologies.

minority-owned business—A small business which is unconditionally owned and controlled by one or more socially and economically disadvantaged individuals (minority-owned) who are of good character and citizens of the United States, and which demonstrates potential for success.

non-Federal funds—A recipient's cash, in-kind and/or program income contribution in fulfillment of matching funds requirements under the Funding Opportunity Announcement.

outcomes—The assessment of the results of the FAST program compared to its intended purpose, utilizing short, intermediate and long-term performance measurements to assess how businesses benefited from the services provided in addition to how the state's overall SBIR performance has improved including but not limited to an increase in the number and dollar amount of SBIR Phase I, II and III awards won by small business technology firms.

Phase 0 awards—Phase 0 is a general term indicating preliminary grant assistance designed to support the development of a Phase 1 SBIR or STTR proposal. Such funding can be for initial R&D efforts to support a planned Phase 1 proposal, but is more commonly used as support funds for the planning, preparation, and evaluation of a Phase 1 proposal.

Phase 1 awards—The objective of Phase I (Concept Development) is to establish the technical merit, feasibility, and commercial potential of the proposed Research/Research and Development (R/R&D) efforts and to determine the quality of performance of the small business awardee organization prior to providing further Federal support in Phase II. SBIR Phase I awards are typically between \$100,000 - \$250,000 total costs for six (6) months.

Phase 2 awards—The objective of Phase II (Prototype Development) is to continue the R/R&D efforts initiated in Phase I. Funding is based on the results achieved in Phase I and the scientific and technical merit and commercial potential of the project proposed in Phase II. Typically, only Phase I awardees are eligible for a Phase II award. SBIR Phase II awards are typically between \$600,000 - \$1,500,000 total costs for two (2) years.

Phase 3 awards—The objective of Phase III (Commercialization), where appropriate, is for the small business to pursue commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR program does not fund Phase III; any federal agency can procure technologies developed under Phase I or II using a sole source authority. For some Federal agencies, Phase III may involve follow-on non-SBIR

funded R&D or production contracts for products, processes or services intended for use by the U.S. Government.

Principal Investigator (PI)—Every SBIR and STTR proposal must designate a single individual who will serve as the principal investigator on the proposed project. The PI has overall responsibility for the project, and therefore must be credible in terms of his/her education, work and project management experience. The principal investigator has to meet certain eligibility requirements on an SBIR/STTR proposal. For SBIR projects, the PI must be “primarily employed” by the applicant small business during the SBIR award period.

Procurement Technical Assistance Center (PTAC)—PTACs provide local, in-person counseling and training services for small business owners. They are designed to provide technical assistance to businesses that want to sell products and services to federal, state, and/or local governments. PTAC services are available either free of charge or at a nominal cost. PTACs are part of the Procurement Technical Assistance Program, which is administered by the Defense Logistics Agency.

small business or small business concern—A business concern organized as a for-profit U.S. business that is at least 51 percent owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States; and conforms with SBA’s size standards, including its affiliates.

Small Business Innovation Research (SBIR) Program—A highly competitive Federal-wide program, signed by President Reagan into law in 1982, that encourages domestic small businesses to engage in Federal R/R&D that has the potential for commercialization. Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization. SBIR programs have awarded over \$50 billion to research-intensive U.S. small businesses. The mission of the SBIR/STTR programs is to support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy.

Small Business Technology Transfer (STTR) Program—A highly competitive program that supports R&D and financing of cutting edge technologies. Through a competitive awards-based program, STTR facilitates cooperative R&D between small business concerns and U.S. research institutions with potential for commercialization. The mission of the SBIR/STTR programs is to support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy.

SBIR support organization—Defined in this best practices guide to indicate the organizations that did not receive a FAST award in 2018, though they may have received FAST awards in previous years and may intend to apply in future years.

Small Business Administration (SBA)—Cabinet-level Federal agency fully dedicated to small businesses, providing counseling, capital, and contracting expertise. Since its inception in 1953, the SBA has served to aid, counsel, assist and protect the interests of small businesses. While it is best known for its financial support of small businesses through its many lending programs, the Agency also plays a critical role in providing funding to organizations that deliver technical assistance in the form of counseling and training to small business concerns and nascent entrepreneurs in order to promote growth, expansion, innovation, increased productivity and management improvement.

Small Business Development Center (SBDC)—Lead center hosted by universities and state economic development agencies and funded, in part, through a partnership with the Small Business Administration (SBA). SBDCs provide small businesses with many forms of support, including management and technical assistance. They provide a variety of free business consulting and low-cost training services including advice on writing business plans, accessing capital, and marketing. There are 63 SBDCs with over 900 sub-centers through the U.S. and its territories. The mission of an SBDC is to promote growth, innovation, productivity and revenue for small businesses through improvements to their business administration.

technical assistance—Counseling and training to small business concerns and nascent entrepreneurs in order to promote growth, expansion, innovation, increased productivity and management improvement (as described in 35 (c)(2)(B) [15 USC § 657c] and in accordance with the terms of the subject Program Announcement and a Recipient’s Notice of Award).

training—A workshop, session, or webinar which delivers a structured program of knowledge, information or experience on a business-related subject. The training must last for a minimum of one hour and include two or more individuals and/or businesses in attendance.

underserved businesses—While the SBA and Federal law do not officially designate any groups to be considered underserved for the purposes of SBIR/STTR or FAST, includes participants that identify as a member of the following groups as underserved: (1) Women; or (2) Racial and ethnic minorities (Black Americans; Hispanic Americans; Native Americans (Alaska Natives, Native Hawaiians, or enrolled

members of a Federally or State recognized Indian Tribe); Asian Pacific Americans; and Asian Americans).

women-owned business—A small business concern owned and controlled by women, either start-up or existing, which is not less than 51 percent owned by one or more women and the management and daily business operations are controlled by one or more women.

Endnotes

ⁱ The Standard Form–Performance Progress Reports (SF-PPRs), which provide narrative reports, are a set of FAST program documents providing a narrative of the grantees’ accomplishments and the services they provide to small businesses, as well as a self-assessment that compares the services provided with the FAST grantees’ objectives as stated in their grant applications. In addition, several of the reports discuss lessons learned, best practices, and successes, which contributed to this Best Practices guide. Eighty SF-PPR reports were submitted for the study period (FY 2014-17), with nearly all grantees reporting annually.

ⁱⁱ SBA recommended the FAST and other SBIR support organizations to interview. FAST grantees in turn recommended small businesses to interview. Interviewees were selected based on a range of criteria to maximize learning opportunities and provide a diversity in viewpoints. The FAST grantees interviewed are generally different from the FAST grantees who submitted the narrative reports referenced for this guide.

ⁱⁱⁱ In this guide we refer to these organizations as SBIR support organizations; however, note that they also provide STTR support services.

^{iv} It should be noted that each individual SBIR participating agency sets its own limits up to a congressionally mandated ceiling.

^v “States,” for the purposes of FAST and this guide, include the fifty (50) States, the District of Columbia, the Commonwealths of Puerto Rico and the Northern Marianas Islands, the Virgin Islands, Guam, the Republic of the Marshall Islands, the Federated States of Micronesia, and American Samoa.

^{vi} Small Business Act (Rev.13): https://www.sba.gov/sites/default/files/Small%20Business%20Act_0.pdf.

^{vii} WBDC InventIllinois Announcement. <https://www.wbdc.org/inventillinois-faqs/>.

^{viii} <https://mhita.org/educate/wlit/>.

^{ix} <https://mhita.org/mnsbir/rural-innovation-commercialization/>.

^x FAST grantee narrative report 2017.

^{xi} <https://www.federallabs.org/>.

^{xii} 2017 TEDCO Annual Report. [http://dlslibrary.state.md.us/publications/TEDCO/EC10-415\(a\)_2017.pdf](http://dlslibrary.state.md.us/publications/TEDCO/EC10-415(a)_2017.pdf).

^{xiii} FFAB Technology Transfer Report.

<http://commerce.maryland.gov/Documents/BusinessResource/FederalFacilitiesAdvisoryBoardTechTransferReport.pdf>.

^{xiv} <https://www.mainetechnology.org/partners-resources/viral/>.

^{xv} These glossary terms and definitions were collected from relevant government sources, including the SBA FAST Funding Opportunity Announcement (FOA):

<https://www.sbir.gov/sites/default/files/FY19%20Funding%20Opportunity%20Definitions.pdf>.